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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/505,157	04/28/2005	Akio Ozasa	12480-000055/US	5698
30593	7590	09/08/2006		
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 8910 RESTON, VA 20195				
			EXAMINER DESAI, ANISH P	
			ART UNIT 1771	PAPER NUMBER

DATE MAILED: 09/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/505,157

Applicant(s)

OZASA ET AL.

Examiner

Anish Desai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>08/20/04&11/22/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The applicant has provided the international search report (ISR) citing JP 2000-169611 as "X" reference. The examiner has reviewed aforementioned reference but not agreed with the citation of the ISR because the JP 2000-169611 does not teach a molding material made of a starch and a derivative thereof as claimed in the presently claimed subject matter.

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,3,6, and 14 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Doane et al. (US 5,861,216).

Doane teaches articles provided in which self-supporting structure formed of natural polymer has self-adherent, moisture resistant hydroxyl-functional polyester on the structure surface. The self-supporting structure of Doane is preferably a starch and polyvinyl alcohol blend in expanded form (abstract). Further Doane teaches that water

is a typical expansion agent (column 9, lines 12-13). According to Doane, data provided by the DOW Chemical Company (manufacturer of hydroxyl-functional polyesters) indicates the biodegradable nature of these polymers (column 5, lines 7-9). Moreover, the hydroxy-functional polyester of Doane provides substantial water resistance for the article (column 3, lines 27-29). Doane teaches that starches are preferred as natural polymers for forming a structure with sufficient structural integrity (column 7, lines 46-49). Additionally, Doane discloses that combinations of modified starches are suitable for use in preparing self-supporting structure (column 8, lines 15-32), which reads on starch and a derivative thereof as claimed. Alternatively, it would have been obvious to mix a starch with the derivative of starch (modified starch) in the invention of Doane, motivated by the desire to form a structure with sufficient structural integrity.

Although Doane does not explicitly teach the starch and the derivative containing high-amylose starch or a derivative thereof, it is reasonable to presume that the starch and the derivative of starch (modified starch) as disclosed by Doane necessarily contains high-amylose starch or a derivative thereof because like material has like property. The applicant discloses that Starch and a derivative thereof (including high-amylose starch) used as the main material of the molding material is not limited to any particular type. For instance, starch easily acquired from agricultural products worldwide as major cereals, such as potato, corn, tapioca, rice, wheat, sweet potato, etc. can be preferably used (specification, page 17). Doane also teaches starches are preferred for use as natural polymers, particularly due to ready availability and low cost. Starch is a low-cost and abundant natural polymer composed of amylose and amylopectin (column

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7, lines 46-53). Further Doane discloses starches are obtained in granular form and may be derived from cereals or grains such as corn, wheat, rice (column 7, lines 57-60). Additionally at column 8, lines 15-36, Doane teaches modified starches. Thus, the starch and the starch derivative of Doane would contain high-amylose starch or a derivative thereof. *In re Fitzgerald* 205 USPQ 594 and *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

The recitation "article being molded, through steam expansion, from a slurry or dough molding" is related to product by process claim limitation. The products by process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. "Even though product by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product by process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289, 292 (Fed. Cir. 1983). In the presently claimed subject matter, the biodegradable molded article comprises a starch, a derivative of starch, and water (claim 1) or a starch, a derivative of starch, water, and polyvinyl

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alcohol (claim 3). Further a biodegradable hydrophobic plastic film is attached to a surface of the biodegradable molded article. Doane also discloses a biodegradable self-supporting expanded structure comprising of starch, modified starch (derivative of starch), polyvinyl alcohol, and water. Further moisture resistant hydroxyl modified polyester of Doane is coated on the biodegradable self-supporting expanded structure. Thus, the biodegradable expanded self-supporting structure of Doane is similar to the claimed biodegradable molded article of the applicant. The examiner is equating moisture resistant hydroxyl modified polyester of Doane as a biodegradable coating film having hydrophobicity as claimed.

3. Claims 7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doane et al. (US 5,861,216) in view of Bradt (US 5,888,599).

The invention of Doane is previously disclosed. Doane is silent as to teaching of coating film is biaxially stretched. However, Bradt teaches multi-layer lidding film and a package with the lidding film heat-sealed thereto as a cover (abstract). The multi-layer lidding film of Bradt comprises a biaxially oriented polyester film (column 3, lines 19-21). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to biaxially stretch the polyester based films of Doane because it is known in the packaging art to biaxially stretch a film that is attached to a disposable article. Alternatively, it would have been obvious to one having ordinary skill in the art at the time the invention was made to biaxially stretch the hydroxy-functional polyester film coating of Doane, motivated by the desire to enhance the strength of said film.

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4. Claims 1,3, 8-12, and 16-20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ando et al. (US 5,639,518).

Ando teaches a method for manufacturing biodegradable molded article which are decomposable by bacteria, microbes etc. in the soil (column 1, lines 5-7). The molded article of Ando is in specified shape (Figure 9). Further the molded article of Ando comprises mixture of starches and derivatives (column 9, lines 7-10), polyvinyl alcohol (column 10, lines 27-30), and water (column 8, line 62). Additionally, Ando discloses a material to be molded was prepared by placing the sheet of material 21 and soybean protein sheets 22 having water and moisture resistant properties one upon another in the order shown in Figure 8 (column 27, lines 66-67, column 28, lines 1-4). The sheet 22 of Ando reads on coating film attached to a surface of the biodegradable expanded molded article, the film being mainly made of a biodegradable plastic and having at least hydrophobicity as claimed.

Although Ando does not explicitly teach the starch and the derivative containing high-amylose starch or a derivative thereof, it is reasonable to presume that the starch and the derivative of starch (modified starch) as disclosed by Ando necessarily contains high-amylose starch or a derivative thereof because like material has like property. The applicant discloses that Starch and a derivative thereof (including high-amylose starch) used as the main material of the molding material is not limited to any particular type. For instance, starch easily acquired from agricultural products worldwide as major cereals, such as potato, corn, tapioca, rice, wheat, sweet potato, etc. can be preferably

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used (specification, page 17). Ando also teaches starches such as corn starch, potato starch, rice starch, wheat starch and derivatives such as alpha starches or denatured starches of above (column 9, lines 7-10). Thus, the starch and the starch derivative of Ando would contain high-amylose starch or a derivative thereof. *In re Fitzgerald* 205 USPQ 594 and *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

The recitation "article being molded, through steam expansion, from a slurry or dough molding" is related to product by process claim limitation. The products by process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. "Even though product by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product by process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289, 292 (Fed. Cir. 1983). In the instantly claimed subject matter, the biodegradable molded article comprises a starch, a derivative of starch, and water (claim 1) or a starch, a derivative of starch, water, and polyvinyl alcohol (claim 3). Further a biodegradable hydrophobic plastic film is attached to a

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surface of the biodegradable molded article. Ando also discloses biodegradable molded article comprising starch, derivative of starch, water, and polyvinyl alcohol. Further, the biodegradable molded article of Ando has water and moisture resistance soybean protein sheets are attached. Thus, the biodegradable molded article of Ando is similar to the applicant's biodegradable molded article.

With respect to claims 8 and 16, Ando discloses glass and metal fibers (column 10, lines 11-13). Regarding claims 9 and 17, Ando does not explicitly teach the expanded molded article accounts for not less than 60 weight % of total weight of the biodegradable molded article. However since the invention of Ando and the presently claimed subject matter has the same utility (i.e. biodegradable molded expanded article), it would have been obvious that the expanded molded article of Ando accounts for not less than 60 weight % of total weight of the biodegradable molded article, in order to successfully practice the instantly claimed invention. With respect to claims 10 and 18, Ando discloses water weight % of 38.7% (Table 1), 60% (Table 5) etc. Alternatively, it would have been obvious to add the water in the amount of 20 weight % to 70 weight %, motivated by the desire to uniformly agitate and adequately mix the slurry. Regarding claims 12 and 20, Ando teaches molded article with moisture content of 5 percent by weight (column 14, lines 26-27). Alternatively, it is known in the art to control the amount of water in the range of 3 wt% to 20 wt% in the biodegradable molded expanded (foamed) articles in order to control the strength of the foamed (expanded) article as evidenced by the Derwent abstract of JP 05-320401.

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5. Claims 4,5, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al. (US 5,639,518) in view of Shogren et al. (US 6,146,573).

The invention of Ando is previously disclosed. Ando is silent as to teaching of polymerization degree of polyvinyl alcohol of not less than 1000 (claim 4) and polyvinyl alcohol having saponification degree of not less than 75% (claims 5 and 13). However, Shogren teaches disposable, molded articles such as cups, fast-food packages, trays etc. (abstract) produced by starch-based backing composition. Further, the backing composition of Shogren comprises polyvinyl alcohol with degree of polymerization over 1600 (abstract) and degree of saponification of less than or equal to 95.5 (column 4, lines 29-35). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the polyvinyl alcohol with degree of polymerization of over 1600 and saponification degree of less than or equal to 95.5, motivated by the desire to obtain article with improved flexibility and increased water resistance.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al. (US 5,639,518) in view of Altieri (US 5,153,037).

The invention of Ando is previously disclosed. Ando is silent as to teaching of starch and a derivative thereof contains not less than 50 weight % high-amylose starch or a derivative thereof. However, Altieri teaches a biodegradable shaped products comprising an expanded modified flour products, preferably having high amylose content, and having a low density, closed cell structure with good resilience and compressibility properties. More particularly, the expanded starch products of this

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invention, which includes packaging products and packaging material, has at least 45% by weight amylose content (column 2, lines 60-68). Further, Altieri teaches amylose content of at least 65% by weight (column 4, line 29). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the high amylose containing starch as taught by Altieri in the invention of Ando, motivated by the desire to form a compressible and crush resistant article.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1,6,7,11, and 12 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1,4,5, 13-16, and 18 of copending Application No. 10/505,130. Although the conflicting claims are not

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identical, they are not patentably distinct from each other because claims 1,6,7,11, and 12 encompass same subject matter as claims 1,4,5, 13-16, and 18 of S/N 10/505,130.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anish Desai whose telephone number is 571-272-6467. The examiner can normally be reached on Monday-Friday, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

apd



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